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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Richard MONTGOMERY, et al.

Serial No.: 10/822,054

Group Art Unit: 2835

Filed: April 8, 2004

Examiner: B. Chervinsky

FOR: COLD PLATE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop After Final  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the procedures outlined in the Official Gazette published July 12, 2005, applicants respectfully request review of the following clear errors in the final office mailed November 25, 2005, in connection with the above-identified application.

Claims 1-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,796,370 (Doll) in view of U.S. Patent No. 5,412,536 (Anderson). The panel is referred to applicants' response mailed January 25, 2006 for detailed traversals of this rejection.

With respect to claims 1, 7, and 13, the Examiner admits that Doll fails to teach or suggest the recited features relating to an impingement point for cooling fluid in the enclosure is located at a position corresponding to an expected relatively hotter spot of a heat source, and relies on Anderson to provide this missing teaching. For the Panel's convenience, the cited portion of Anderson, col. 6, lines 16-19, is reproduced below:

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"... For example, the present invention may also be used to cool high local heat flux regions requiring an inert coolant such as mirrors used in high power laser applications."

As is apparent from the foregoing, the Examiner has misconstrued the teachings of Anderson. The cited portion deals only with the general concept of liquid cooling for applications other than electronics and does not teach or suggest locating an impingement point for cooling fluid in an enclosure at a position corresponding to an expected relatively hotter spot of a heat source. The cited portion suggests that the entire mirror is a 'high local heat flux region' and does not describe directing the impingement point to any relatively hotter spot of the mirror. In fact, Anderson fails to even mention hot spots.

In particular, the final office action relies on the following clear factual error. The office action states: "Anderson discloses liquid cooling arrangement having liquid coolant impinged on the hottest spot (col. 6, lines 16-19)." See final office action, page 3, lines 11-12. The cited portion is reproduced above and does not describe what the office action asserts. Quite simply 'high'  $\neq$  'relatively hotter'. Many regions may be considered to be high heat flux without being considered to be a hot spot.

Because Doll and Anderson, individually and in combination, fail to teach or suggest an impingement point for cooling fluid in the enclosure is located at a position corresponding to an expected relatively hotter spot of a heat source, claims 1, 7, and 13 are patentable over Doll in view of Anderson. The dependent claims are likewise patentable.

With respect to claims 4, 10, and 16, the final office action completely fails to address the recitations of these claims. This is clear factual and legal error. The office action fails to establish even a prima facie case of obviousness. If the case is not allowed, applicants respectfully request a new NON-FINAL office action addressing all recitations of all claims.

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In any event, both Doll and Anderson fail to teach or suggest the recited offset impingement point. Accordingly, claims 4, 10, and 16 are separately patentable over Doll in view of Anderson.

With respect to claims 5, 11, and 17, the final office action asserts that Doll discloses that the channel walls provide a high fluid channel aspect ratio since they form narrow fluid channels. The Examiner commits clear factual error by misconstruing the teachings of the Doll reference. As can be seen in many of the figures (e.g. see Figs. 3, 5, and 9), the bottom fin plate 22 with the radial fins 52 and 54 is very low profile, with relatively short fins. Although no dimensions are provided, it is clear from Figs. 8-9 that the aspect ratio is around 1:1 and certainly no more than 2:1. One of ordinary skill in the art would not consider that the channel walls disclosed in Doll provide a high fluid channel aspect ratio.

Because both Doll and Anderson fail to teach or suggest the recited high fluid channel aspect ratio, claims 5, 11, and 17 are separately patentable over Doll in view of Anderson.

With respect to claims 6, 12, and 18, the final office action asserts that Doll discloses that the fluid inlet 48 and the fluid outlet 50 are co-located since they are located in the same plane. Again, the Examiner commits either clear factual error, by misconstruing the teaching of the Doll reference, or clear legal error, by misconstruing the claim language. As would be clear to one of ordinary skill in the art from the claim language itself or with reference to the specification (e.g. see paragraph [0036]), co-located means in the same position or located very near to each other on the enclosure. In Doll, the fluid inlet 48 is located on the opposite side of the cold plate from the fluid outlet 50. Oppositely located inlets and outlets are as far as possible away from any reasonable reading of the term co-located. However broadly the Examiner would like to read the term 'co-located', it is unreasonably broad to read the term on oppositely located inlets and outlets. Quite simply, one of ordinary skill in the art would not consider that the inlet 48 is co-located with the outlet 50.

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Because both Doll and Anderson fail to teach or suggest the recited co-located fluid inlet and fluid outlet, claims 6, 12, and 18 are separately patentable over Doll in view of Anderson.

In view of the foregoing, favorable reconsideration and withdrawal of the rejections is respectfully requested. Early notification of the same is earnestly solicited. If there are any questions regarding the present application, the Review Panel is invited to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

February 27, 2006

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